

Figure 1

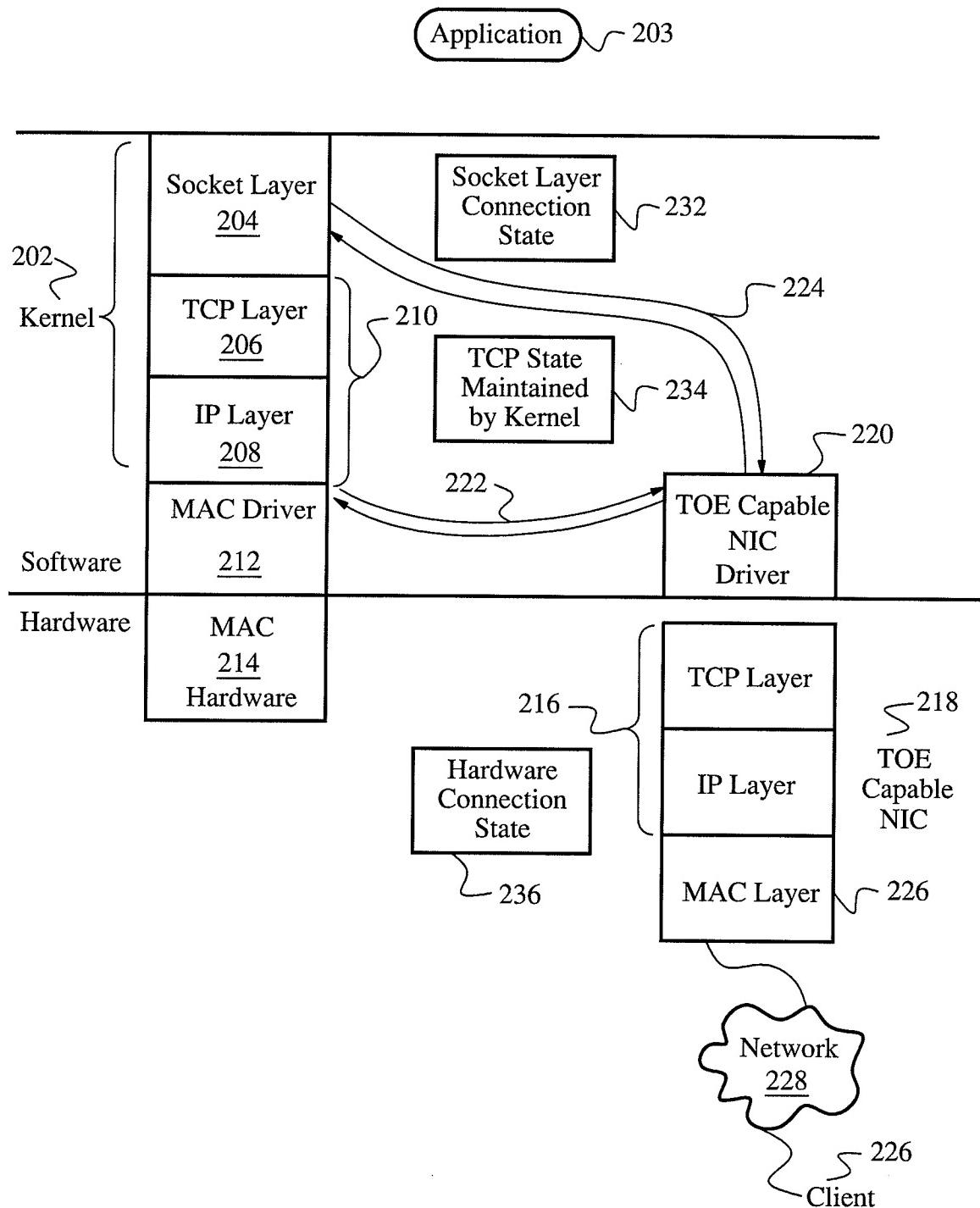


Figure 2

## Data Structures

### A. Data structures maintained by socket layer:

1. Connection state maintained by socket layer (SONODE): Socket state information.

SOCKET LAYER CONNECTION IDENTIFIER

HARDWARE CONNECTION IDENTIFIER

POINTER TO CONNECTION STATE MAINTAINED BY KERNEL (\*CONNT)

2. Connection state table maintained by socket layer:

Identifier	State information
A	Pointer to socket layer connection state
.	.
.	.

### B. Connection state maintained by kernel (CONNT): TCP/IP state information

KERNEL CONNECTION IDENTIFIER

1. Minimum state necessary to offload a connection (MIN\_TCP\_T):

Local (server) and remote (client) IP addresses and ports

Send/receive sequence numbers of packets for the connection

Any round trip estimates for each packet

Congestion window, slow start

### C. Hardware connection state maintained by NIC (HW\_CONN\_T): NIC connection state

HARDWARE CONNECTION IDENTIFIER (HW\_CONNID)

POINTER TO SOCKET STATE INFORMATION (\*SONODE)

1. Minimum state necessary to offload a connection (MIN\_TCP\_T):

Local (server) and remote (client) IP addresses and ports

Send/receive sequence numbers of packets for the connection

Any round trip estimates for each packet

Congestion window, slow start

# Figure 3

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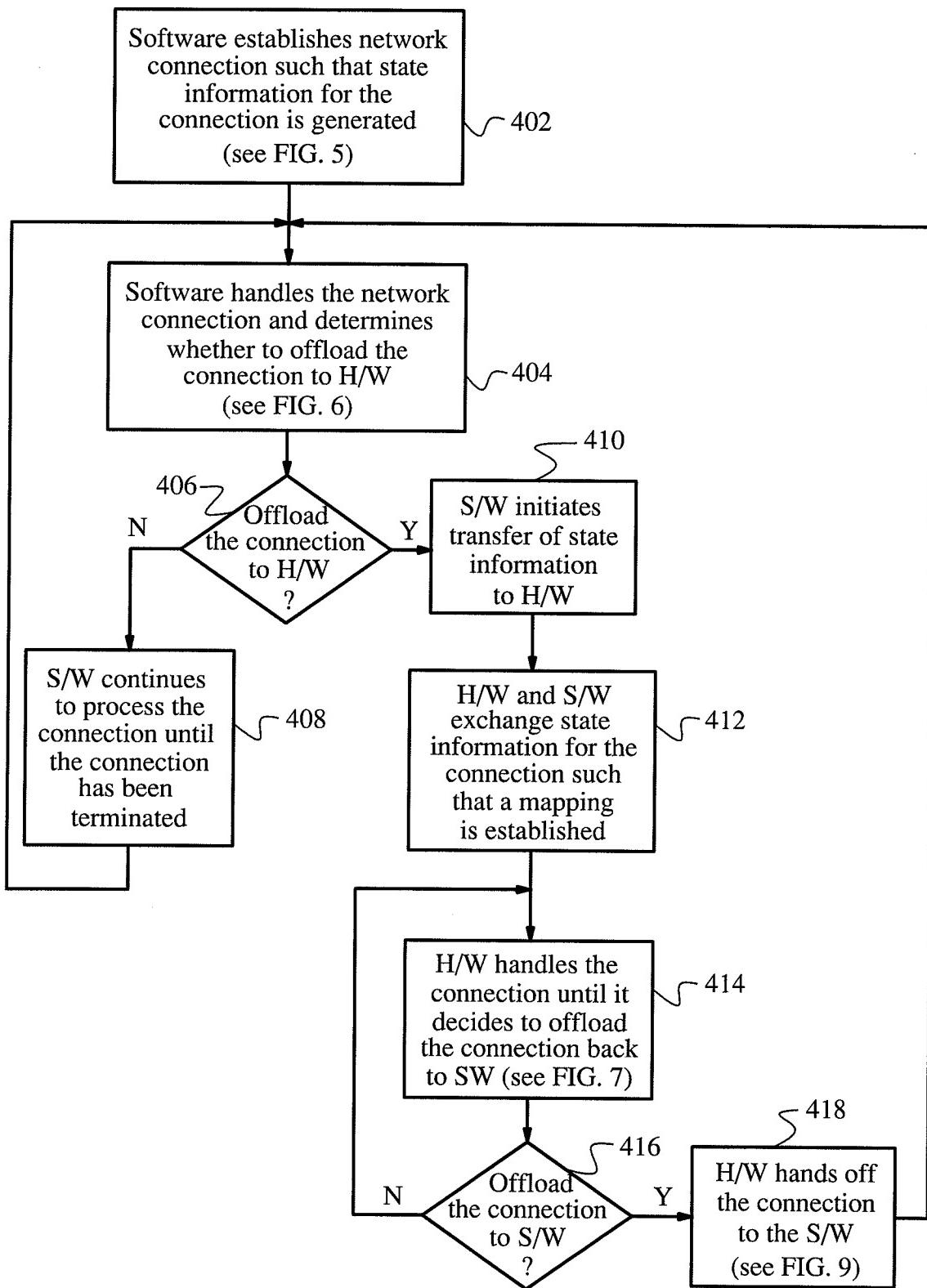


Figure 4

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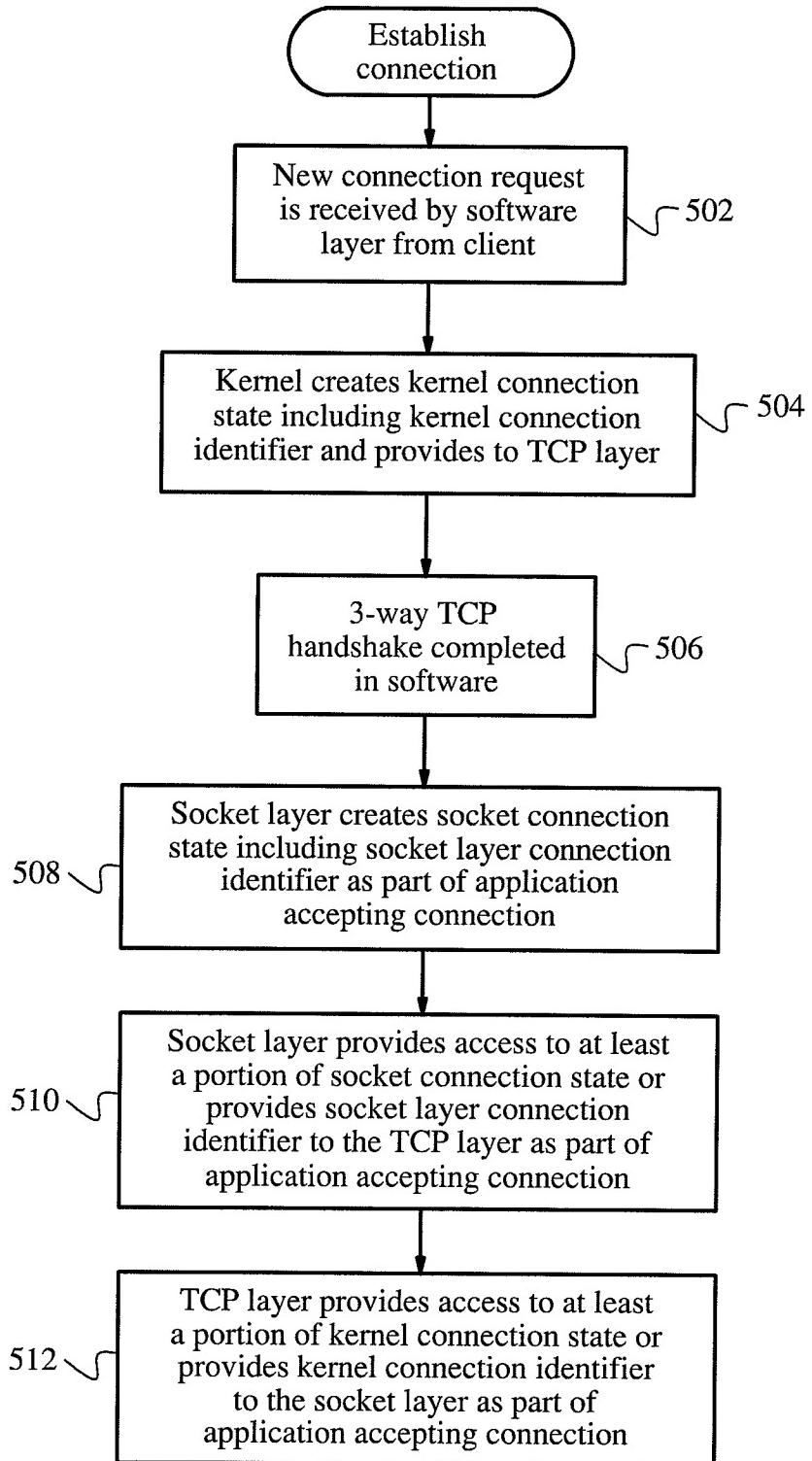


Figure 5

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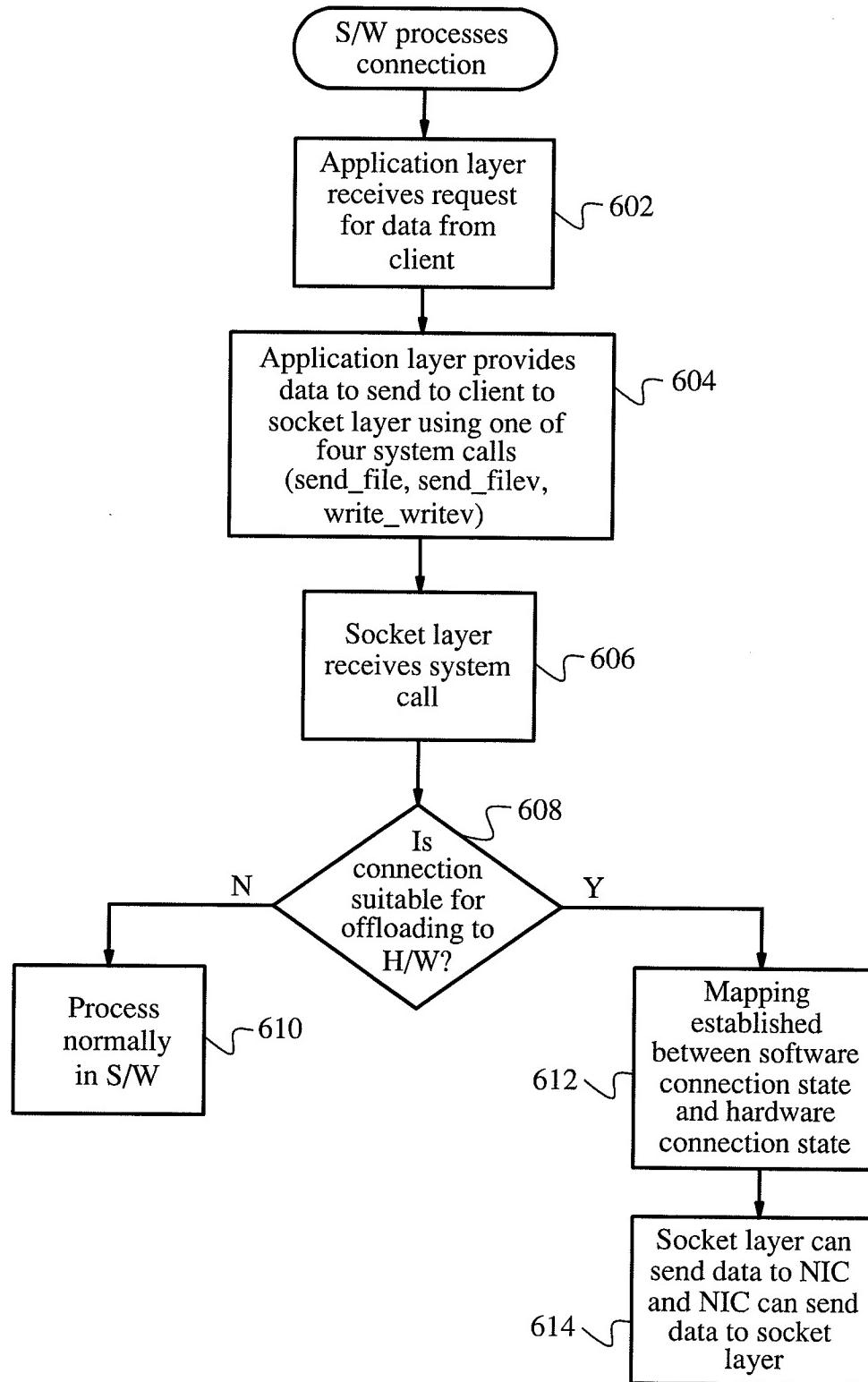


Figure 6

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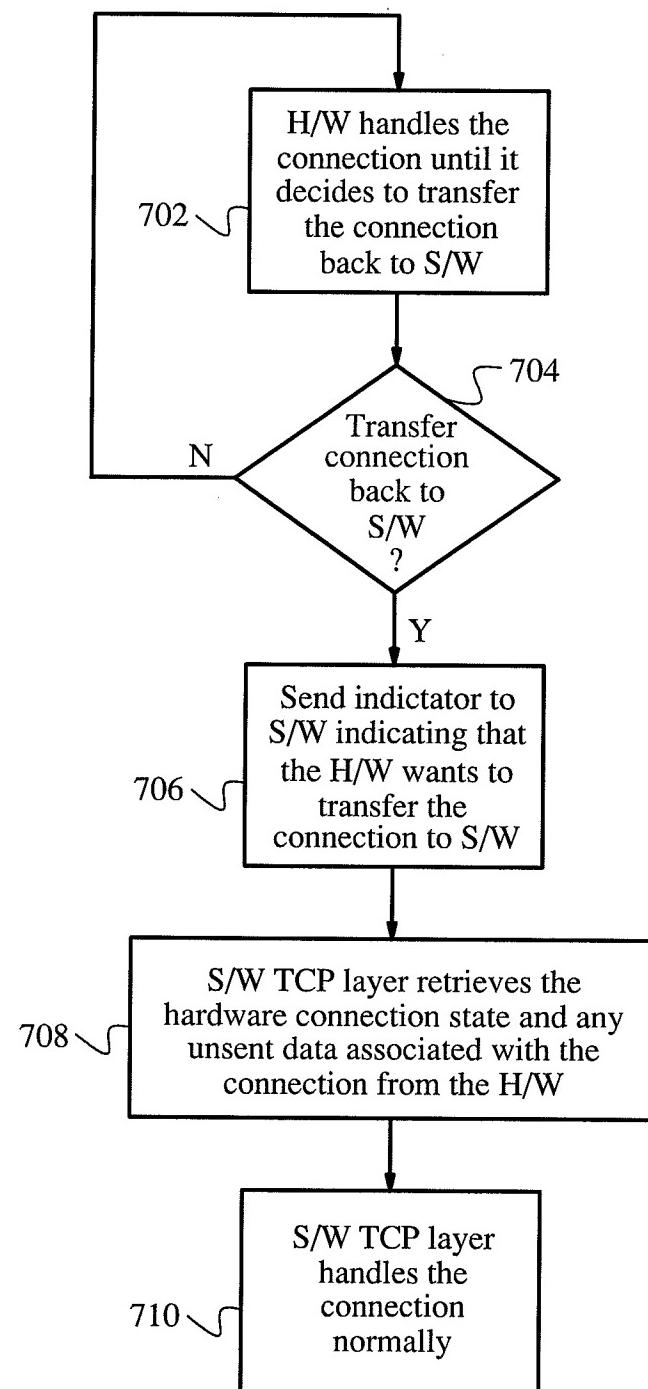


Figure 7

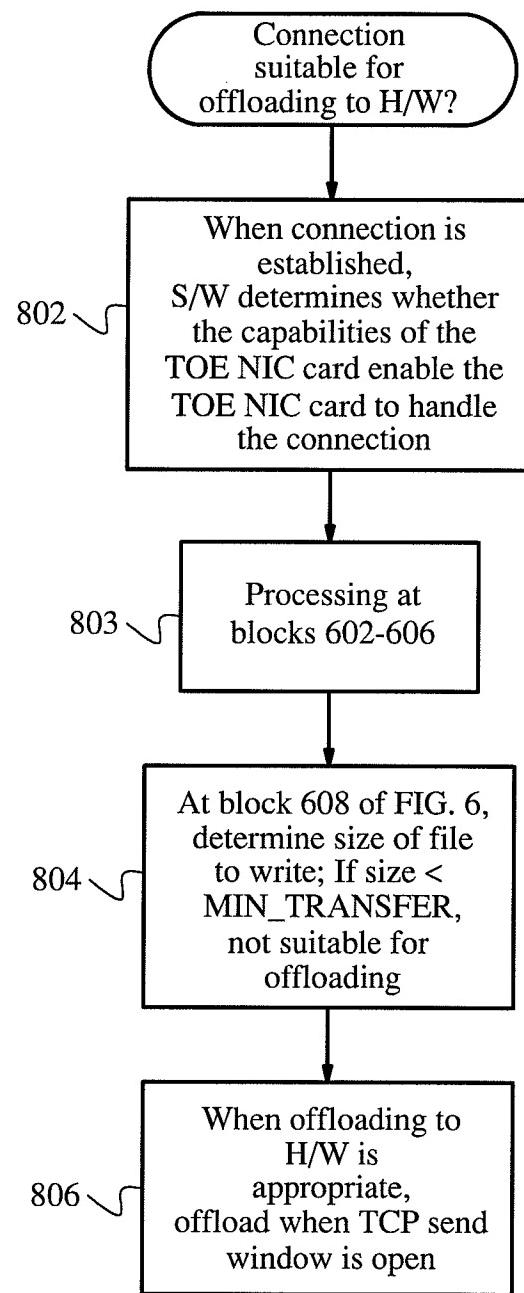


Figure 8

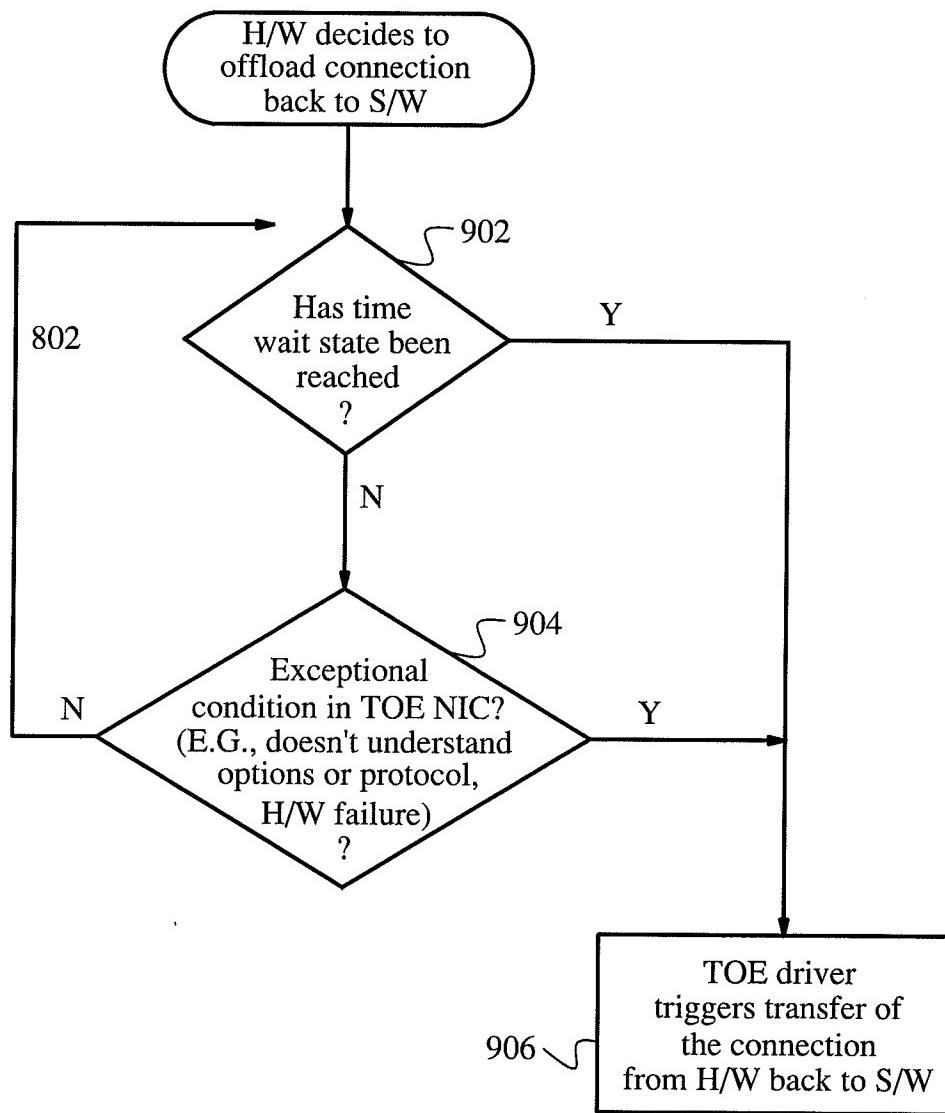


Figure 9

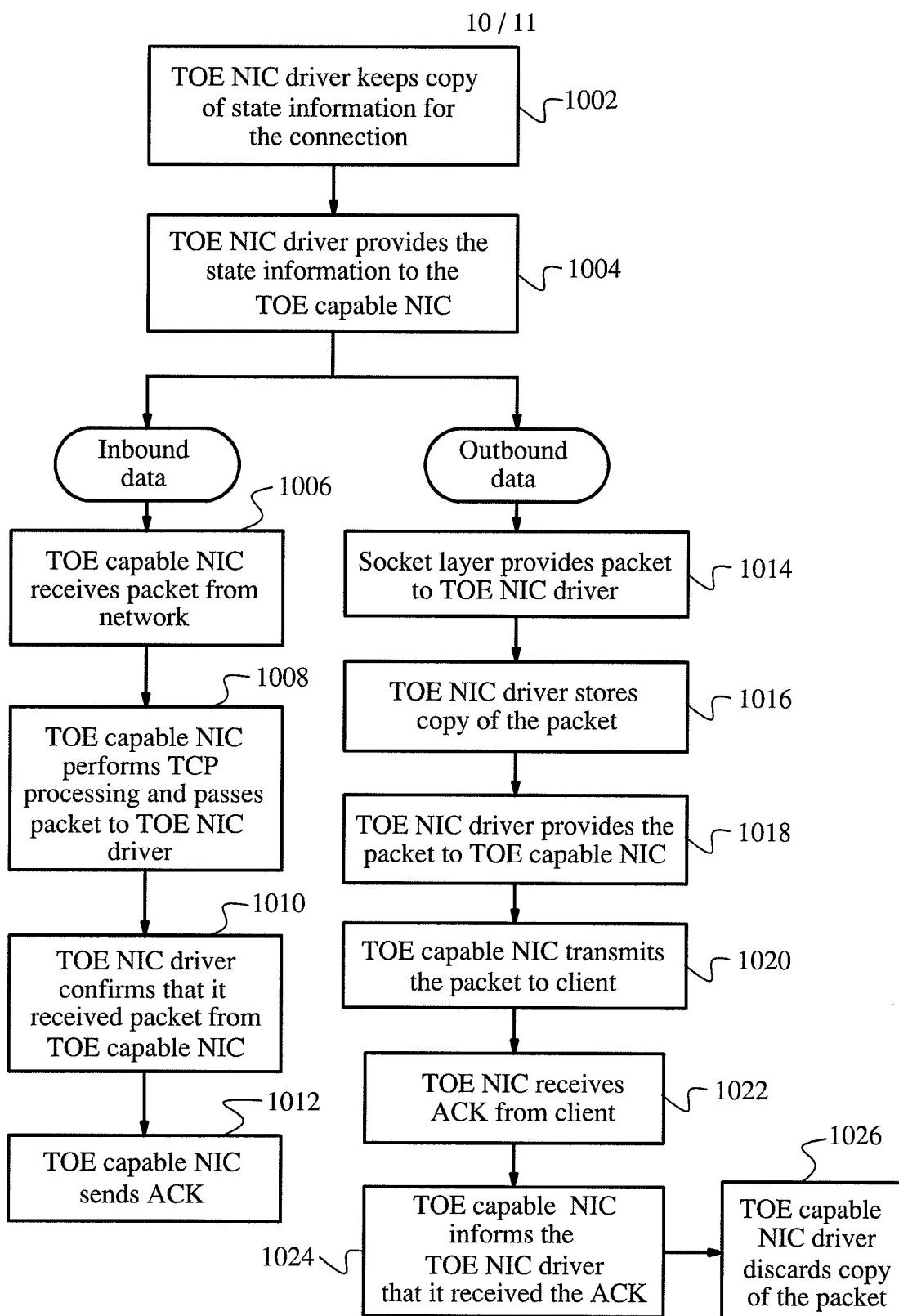


Figure 10

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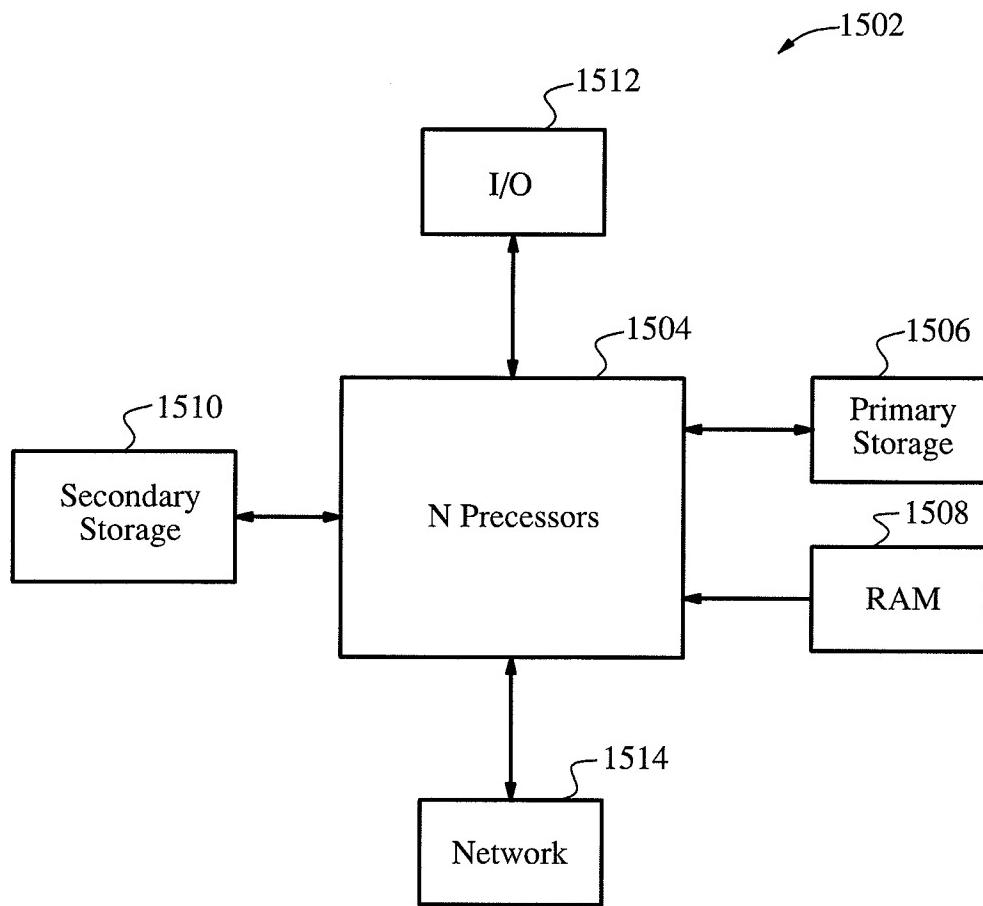


Figure 11